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EXAMINER

PHAN, HUY Q

ART UNIT PAPER NUMBER

2687

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,819

Applicant(s)

CZAJA ET AL.

Examiner

Huy Q Phan

Art Unit

2687

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-19 and 24-27 is/are rejected.
7) ☒ Claim(s) 20-23 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Amendment filed on date: Nov. 08, 2004.
Claims 1-27 are still pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-9, 13 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. (US-6,628,958) in view of Padovani et al. (US-6,151,502).**

Regarding claims 1, 24 and 25, Kamel et al. disclose a method (fig. 3 and col. 6, lines 10-46), an apparatus (fig. 3 and its description) and a computer program executable on a computing device (inherently to ones of the wireless communication system's structure in order for the system performing its function properly), wherein the program is capable of directing performance of performing cell selection handoffs in a

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wireless communication system (fig. 3 and col. 6, lines 10-46), wherein the wireless communication system includes a plurality of base stations (fig. 3, BSs 312-316) in communication with a mobile station (fig. 3, MS 126), wherein the base stations transmit information to the mobile station via a forward link (fig. 3 and col. 6, lines 10-46), and wherein the base stations receive information from the mobile station via a reverse link (fig. 3 and col. 6, lines 10-46), and wherein each base station is capable of gating off transmissions for selected time intervals (figs. 4 and 6, cols. 6-9), and wherein the mobile station is capable of determining a strongest base station (col. 9, lines 21-40), and wherein the communication system is capable of performing soft handoffs (col. 7, lines 50-53). But, Kamel et al. fail to expressly teach the method comprising the steps of: a) determining a desired set of base stations, based upon (i) obtaining a threshold parameter based upon receiver needs for proper reception, and (ii) comparing a sum of one or more base station signal strengths to the threshold parameter; b) gating off selected base stations based on the desired set of base stations that was determined during step (a); and c) performing a soft handoff.

However in analogous art, Padovani et al. teach the method comprising the steps of: a) determining a desired set of base stations (col. 3, lines 22-30); based upon i) obtaining a threshold parameter based upon receiver needs for proper reception (col. 3, lines 42-55), and ii) comparing a sum of one or more base station signal strengths to the threshold parameter (col. 3, lines 42-67); b) gating off selected base stations based on the desired set of base stations that was determined during step (a) (col. 3, line 59-col. 4, line 16); and c) performing a soft handoff (col. 3, lines 5-7; also see figs. 1-2 and col.

5). Since, Kamel et al. and Padovani et al. are related to the method of handoff in wireless communication system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Kamel et al. as taught by Padovani et al. for purpose of improving significantly the reliability and quality of wireless communication services.

Regarding claim 2, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Padovani et al. further disclose wherein the step (a) comprises determining a set of strong base stations within a mobile station active set (col. 3, lines 22-30).

Regarding claim 3, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Kamel et al. further disclose wherein the step (a) comprises determining a set of strong base stations on a Power Control Group ("PCG") basis (col. 3, lines 11-52; also see figs. 4 and 6, cols. 6-9).

Regarding claim 4, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Kamel et al. further disclose wherein the step (b) comprises gating off all base stations except for the desired set of base stations (col. 3, line 59-col. 4, line 16).

Regarding claim 5, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Kamel et al. further disclose wherein the step (a) comprises the following sub-steps: (i) measuring carrier-to-interference ratios of all base stations in a mobile station active set (col. 6, lines 26-46); and (ii) selecting a base station having a best signal to noise (E_b/N_t) to achieve a specified QOS to be a chosen base station of the desired set of base stations (col. 7, line 59-col. 8, line 7).

Regarding claim 6, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Padovani et al. further disclose wherein the step (a) is performed by a mobile station (cols. 3-4).

Regarding claim 7, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Kamel et al. further disclose wherein the step (a) comprises the following sub-steps: (i) measuring a plurality of received pilot E_c/I_o values that represents a pilot E_c/I_o for each pilot in a mobile station active set (col. 6, lines 26-46); (ii) averaging the plurality of received pilot E_c/I_o values (col. 10, line 64-col. 11, line 48); and iii) selecting a base station having a best pilot E_c/I_o value to be a chosen base station of the desired set of base stations (col. 7, line 59-col. 8, line 7).

Regarding claim 8, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 7. Kamel et al. further disclose wherein the averaging sub-step (ii) is implemented by hardware (inherently to the processor; see col. 10, line 64-col. 11, line 48).

Regarding claim 9, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 7. Kamel et al. further disclose wherein the averaging sub-step (ii) is implemented by software (inherently to the program which is simulated by the processor; see col. 10, line 64-col. 11, line 48).

Regarding claim 13, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Kamel et al. further disclose wherein the step (b) comprises transmitting a gate off message to all base stations in a mobile station active set except for the desired set of base stations (col. 3, line 59-col. 4, line 16).

Regarding claim 26, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 1. Padovani et al. wherein the threshold parameter is based upon a quality of service ("QoS") associated with the mobile station (col. 6, lines 16-30).

Regarding claim 27, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 26. Padovani et al. wherein the sum of base station signal strengths is a sum of signal strengths from the desired set of base stations, and the sum is at least as great as the threshold parameter (col. 7, lines 15-67).

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. (US-6,628,958) and Padovani et al. (US-6,151,502) in view of Jou et al. (US-2001/0019541).

Regarding claim 10, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 7. But, Kamel et al. and Padovani et al. fail to expressly teach wherein the averaging sub-step (ii) is performed by a filter.

However in analogous art, Jou et al. teach wherein the averaging sub-step (ii) is performed by a filter (fig. 5, filter 506 and see [0072]). Since, Kamel et al., Padovani et al. and Jou et al. are related to the method of handoff in wireless communication system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Kamel et al. and Padovani et al. as taught by Jou et al. for purpose of improving significantly the reliability, quality and cost of wireless communication services.

Regarding claims 11 and 12, Kamel et al., Padovani et al. and Jou et al. disclose the method of performing cell selection handoffs as defined in Claim 7. But, Kamel et

al., Padovani et al. and Jou et al. fail to expressly teach wherein the averaging sub-step (ii) is performed by an IIR filter; and wherein the averaging sub-step (ii) is performed by an FIR filter.

However, the examiner takes an official notice that the IIR filter and the FIR filter are extremely well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Kamel et al., Padovani et al. and Jou et al. by specifically having the IIR filter or the FIR filter for performing the average of received pilot signals in order to improve advantageously the cost of the wireless communication system.

6. Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al. (US-6,628,958) and Padovani et al. (US-6,151,502) in view of Tiedemann, Jr. et al. (US-6,307,849).

Regarding claim 14, Kamel et al. and Padovani et al. disclose the method of performing cell selection handoffs as defined in Claim 7. But, Kamel et al. and Padovani et al. fail to expressly teach wherein the gate off message is transmitted via a feedback channel.

However in analogous art, Tiedemann teaches wherein the gate off message is transmitted via a feedback channel (col. 17, lines 16-34). Since, Kamel et al., Padovani et al. and Tiedemann are related to the method of handoff in wireless communication system; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Kamel et al. and Padovani et al. as

taught by Tiedemann for purpose of improving significantly the reliability and quality of wireless communication services.

Regarding claim 15, Kamel et al., Padovani et al. and Tiedemann disclose the method of performing cell selection handoffs as defined in Claim 14. Tiedemann further discloses wherein the feedback channel has a length of one to several Power Control Groups ("PCGs") (col. 17, lines 16-34).

Regarding claim 16, Kamel et al., Padovani et al. and Tiedemann disclose the method of performing cell selection handoffs as defined in Claim 14. Tiedemann further discloses wherein the feedback channel has a rate ranging between 200 Hz and 1600 Hz (col. 21, lines 30-45).

Regarding claim 17, Kamel et al., Padovani et al. and Tiedemann disclose the method of performing cell selection handoffs as defined in Claim 1. Tiedemann further discloses the method as recited in the rejection of claim 1, wherein the step (a) comprises the following sub-steps:

- i) continuously determining channel condition estimate for each base station in a mobile station active set (col. 3, lines 5-39);
- ii) continuously sorting the channel condition estimates by strength (col. 11, lines 10-17); and

iii) continuously determining whether a strongest channel condition estimate is greater than a threshold parameter (col. 11, lines 18-67).

Regarding claim 18, Kamel et al., Padovani et al. and Tiedemann disclose the method of performing cell selection handoffs as defined in Claim 17. Tiedemann further discloses wherein the determining sub-step (i) utilizes a sum of all usable multipath signals to estimate channel conditions (col. 14, lines 15-24).

Regarding claim 19, Kamel et al., Padovani et al. and Tiedemann disclose the method of performing cell selection handoffs as defined in Claim 17. Tiedemann further discloses wherein the estimating sub-step (i) averages the continuous channel condition estimate during uncertainty periods (col. 16, line 29-col. 17, line 54).

Allowable Subject Matter

7. Claims 20-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 20-23, the applied references fail to disclose or render obvious the claimed limitations that wherein the threshold parameter of the determining sub-step (iii) is defined by the following equation: $T_QoS_dB = FPC_FCH_SETPT + \Delta\chi$.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Q Phan whose telephone number is 703-305-9007. The examiner can normally be reached on 8AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kincaid G Lester can be reached on 703-306-3016. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SONNY TRINH
PRIMARY EXAMINER

Examiner: Phan, Huy Q.

AU: 2687

Date: Mar. 25, 2005